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10/009959

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December 12, 2001

BOX PCT

Honorable Commissioner of
Patents and Trademarks
P.O. Box 2327
Arlington, VA 22202

PCT/EP00/05488
- filed 15 June 2000

Re: Application of Elke **KRAFT**, et al.
"WOODEN FLOOR"
Our Ref.: 3827.088

Dear Sir:

The following documents and fees are submitted herewith in connection with the above application for the purpose of entering the National stage under 35 U.S.C. §371 and in accordance with Chapter II of the Patent Cooperation Treaty:

- X this express request to immediately begin national examination procedures (35 U.S.C. 371(f)).
- X an executed Declaration and Power of Attorney.
- X a German Language International Application with European Search Report
- X an English (translation of the) International Application.
- an English (translation of) Article 19 claim amendments.
- English translation of Article 34 amendments (annexes to the IPER) and German language IPER.
- an executed Assignment and PTO 1595 form.
- X One (1) Sheet of Formal Drawings
- X Preliminary Amendment.

29/009959

12 DEC 2001

It is assumed that copies of the International Application, the International Search Report, the International Preliminary Examination Report, and any Articles 19 and 34 amendments as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned can easily provide them upon request.

The Government filing fee is calculated as follows:

Total claims	<u>20</u>	-	20	=		x \$ 18	=	\$
Independent Claims	<u>4</u>	-	3	=	<u>1</u>	x \$ 84	=	\$ 84.00
Base Fee								\$ 890.00*
TOTAL FILING FEE								\$ 974.00

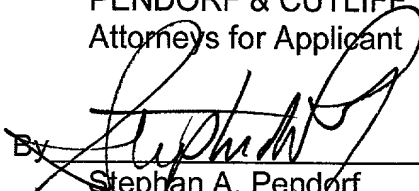
* A copy of the European Search Report is attached.

A check for the statutory filing fee of \$974.00 is attached. Please charge or credit any difference or overpayment to Deposit Account No. 16-0877. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §1.492 which may be required during the entire pendency of the application to said Account.

Priority is claimed from June 18, 1999, based on German Application No. 199 28 030.4.

Respectfully submitted,

PENDORF & CUTLIFE
Attorneys for Applicant

By 
Stephan A. Pendorf
Registration No. 32,665

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Elke KRAFT, et al.

Appln. No.:

Filed: December 12, 2001

For: WOODEN FLOOR

Attorney Docket No.: 3827.088

PRELIMINARY AMENDMENT

Attn: Box PCT
Honorable Commissioner of
Patents and Trademarks
P.O. Box 2327
Arlington, VA 22202

Sir:

Prior to examination of the above-identified application,
please amend the application as follows:

IN THE CLAIMS (CLEAN VERSION):

Please delete original Claims 1-13; please cancel Substitute
Claims 1-13 and add the following new Claims 14-33:

14. A floor, comprised of

a sub-floor (10) continuously covered with a layer (12)
of hardened adhesive, and

covering elements (16) of wood or wood materials having
a surface adhered to the layer of hardened adhesive, wherein
said covering elements are completely covered on their
adhered surface with the adhesive,

wherein the adhesive layer (12) has a layer thickness
of 0.5 to 5 mm, and wherein the adhesive has a shear

strength in the hardened condition which is less than 1.2 N/mm² and less than that of the sub-floor (10).

15. A floor according to Claim 14, wherein the shear strength of the adhesive is from 0.6 to 1.0 N/mm².
16. A floor according to Claim 14, wherein the adhesive is comprised of a reaction-type resin which hardens upon exposure to water.
17. A floor according to Claim 16, wherein the resin is a polyurethane or polyurethane hybrid resin.
18. A floor according to Claims 14, wherein the adhesive is comprised of modified silicone polymers.
19. A floor according to Claim 14, wherein the adhesive in the hardened condition has a Shore (A) hardness of 20 to 35.
20. A floor according to Claim 14, wherein the adhesive in the hardened condition has a break elongation (strain at break) of 300 to 1000%.
21. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which hardens to a shear strength of less than 1.2 N/mm².
22. A method as in claim 21, wherein said adhesive hardens to a shear strength of 0.6 to 1.0 N/mm².

23. A method as in Claim 21, wherein said sub-floor is comprised of cement, concrete or dry-construction plates.
24. A method as in Claim 21, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.
25. A method as in Claim 21, wherein the adhesive is a polyurethane or polyurethane hybrid which hardens upon exposure to water.
26. A method as in Claim 21, wherein the adhesive is a one component modified silicone polymer.
27. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which hardens to a shore hardness (A) of 20 to 35.
28. A method as in Claim 27, wherein said sub-floor is comprised of cement, concrete or dry-construction plates.
29. A method as in Claim 27, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.
30. A method as in Claim 27, wherein the adhesive is a polyurethane or polyurethane hybrid which hardens upon exposure to water.
31. A method as in Claim 27, wherein the adhesive is a one component modified silicone polymer.

32. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which when hardened has a break elongation of 30 to 1000%.
33. A method as in Claim 21, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.

REMARKS

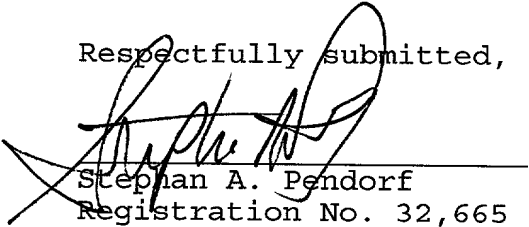
Although original PCT claims 1-23 have been replaced by PCT claims 1-20, the present new claims are numbered beginning with claim 24 in order to avoid confusion with original PCT claims 1-23.

The claims have been amended in order to eliminate multiple dependent claims and claims improperly depending from multiple dependent claims, and to otherwise conform the claims to U.S. practice. Care has been taken to ensure that no new matter is added to the text.

Entry and favorable consideration prior to consideration are respectfully requested.

Respectfully submitted,

PENDORF & CUTLIFF
P.O. Box 20445
Tampa, Florida 33622-0445
(813) 886-6085


Stephan A. Pendorf
Registration No. 32,665

Date: December 12, 2001

U.S. Application No.:
PRELIMINARY AMENDMENT

Attorney Docket: 3827.088

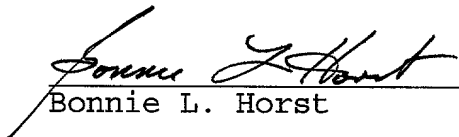
EXPRESS MAIL CERTIFICATE

"EXPRESS MAIL" MAILING LABEL NUMBER: EU005133105US

DATE OF DEPOSIT: December 12, 2001

I HEREBY CERTIFY that the foregoing Preliminary Amendment and a stamped receipt post card are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated and is addressed: ATTN: Box PCT, Commissioner of Patents and Trademarks, P.O. Box 2327, Arlington, VA 22202.

The Commissioner is hereby authorized to charge any additional fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.


Bonnie L. Horst

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The Examiner is requested to accept the marked-up version as it is based on the previous version, which when modified as below, produces the clean version submitted with the current amendment.

Please amend the claims as follows:

Please delete original Claims 1-13.

Please cancel Substitute Claims 1-13.

Please add the following new Claims 14-33:

- 14. A floor, comprised of
a sub-floor (10) continuously covered with a layer (12)
of hardened adhesive, and
covering elements (16) of wood or wood materials having
a surface adhered to the layer of hardened adhesive, wherein
said covering elements are completely covered on their
adhered surface with the adhesive,
wherein the adhesive layer (12) has a layer thickness
of 0.5 to 5 mm, and wherein the adhesive has a shear
strength in the hardened condition which is less than 1.2
N/mm² and less than that of the sub-floor (10).
15. A floor according to Claim 14, wherein the shear strength of
the adhesive is from 0.6 to 1.0 N/mm².
16. A floor according to Claim 14, wherein the adhesive is
comprised of a reaction-type resin which hardens upon
exposure to water.

17. A floor according to Claim 16, wherein the resin is a polyurethane or polyurethane hybrid resin.
18. A floor according to Claims 14, wherein the adhesive is comprised of modified silicone polymers.
19. A floor according to Claim 14, wherein the adhesive in the hardened condition has a Shore (A) hardness of 20 to 35.
20. A floor according to Claim 14, wherein the adhesive in the hardened condition has a break elongation (strain at break) of 300 to 1000%.
21. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which hardens to a shear strength of less than 1.2 N/mm^2 .
22. A method as in claim 21, wherein said adhesive hardens to a shear strength of 0.6 to 1.0 N/mm^2 .
23. A method as in Claim 21, wherein said sub-floor is comprised of cement, concrete or dry-construction plates.
24. A method as in Claim 21, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm .
25. A method as in Claim 21, wherein the adhesive is a polyurethane or polyurethane hybrid which hardens upon exposure to water.

26. A method as in Claim 21, wherein the adhesive is a one component modified silicone polymer.
27. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which hardens to a shore hardness (A) of 20 to 35.
28. A method as in Claim 27, wherein said sub-floor is comprised of cement, concrete or dry-construction plates.
29. A method as in Claim 27, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.
30. A method as in Claim 27, wherein the adhesive is a polyurethane or polyurethane hybrid which hardens upon exposure to water.
31. A method as in Claim 27, wherein the adhesive is a one component modified silicone polymer.
32. A method for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10), comprising applying to said sub-floor and to the surface of said floor covering elements to be adhered an adhesive which when hardened has a break elongation of 30 to 1000%.
33. A method as in Claim 21, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.--

1/PR.T.

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JC05 Rec'd PGT/PTO 1 2 DEC 2001

WOODEN FLOOR

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The invention concerns a wood floor, comprising a hardenable or curable adhesive which is coated as a continuous layer onto a floor base, and covering elements of wood or a wood material that are bonded to the adhesive over their entire surface to be glued.

Description of the Related Art

[0002] For adhering covering elements used to make parquet or inlay floors, adhesives are conventionally employed which are comprised of natural and/or synthetic resins and include suitable solvents and additives. According to applicable DIN (German Industrial Standard) 281, the parquet adhesives exhibit a shear strength of at least 3 to 3.5 N/mm², which results in a hard and brittle junction of the covering elements to the base floor. The adhesive is applied using a toothed trowel. When laying the parquet floor, attention must be paid to the fact that the parquet wood expands when absorbing moisture and shrinks when (re)drying. The parquet wood conventionally contains 9% water during the laying process. The moisture content can change due to water uptake in a new construction through the sub-floor, or from the environment, or as a result of the variable humidity depending upon the season. The expansion and shrinking caused thereby must be absorbed or accepted by the adhesive material. Thereby, substantial shear forces result. These shear forces can in certain cases result in a bowing out of the parquet wood or result in gaps or formation of splits. In the case of breakage it frequently occurs that not only the adhesive joint but rather also the sub-floor comprised of cement is damaged. This is due to the fact that the shear strength of the cement floor is relatively low in comparison to the parquet adhesive according to

- 1 -

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12/12/01
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DIN 281. On the other hand, during drying the parquet pieces shrink. Since the parquet adhesive does not permit a shrinking at the point of adhesion, frequently large gaps occur between the parquet pieces.

SUMMARY OF THE INVENTION

[0003] Beginning therewith, it is the task of the invention to develop a floor which can transmit the shear forces, resulting from expansion due to absorption of moisture and contraction due to drying back again, from the wood parquet elements to the sub-floor without separation of the adhesive bond and bowing out of the floor covering.

[0004] For the solution of this task, there is proposed a floor, comprised of a sub-floor continuously covered with a layer of hardened adhesive, and covering elements of wood or wood materials completely covered on their surface to be adhered with the adhesive, wherein the adhesive layer has a layer thickness of 0.5 to 5 mm, and wherein the adhesive has a shear strength in the hardened condition which is less than that of the sub-floor. Advantageous embodiments and further developments of the invention can be found in the dependent claims.

[0005] The inventive solution is based upon the idea, that the forces occurring during expansion and shrinking of the parquet elements can only be transmitted to the sub-floor without an impermissible localized accumulation of forces when they are distributed and evenly diffused, within the adhesive layer, over the entire adhesive surface. In order to achieve this, it is proposed in accordance with the invention that the adhesive layer has a thickness of 0.5 to 5 N/mm² and that the adhesive in the hardened condition exhibits a shear strength which is less than that of the sub-floor. The shear strength of cement floors is an

average of approximately 1.2 N/mm². In accordance therewith an adhesive is selected, of which the shear strength is less than 1.2 N/mm², preferably 0.6 to 1.0 N/mm². Preferably, a reaction adhesive is selected which hardens with a Shore Hardness (A) of 20 to 35. Thereby it is achieved that, in the case of expansion or shrinking, the forces occurring at the adhesive layer are evenly distributed over the entire adhesive surface. There are no force or tension peaks, which can lead to a release or to a break in the adhesive connection. The distribution of the forces ensures that the floor covering elements deform less in the case of excessive moisture or in the case of drying out. The covering elements are supported and held over large surface areas, without occurrence of breakage areas in the adhesive. Thereby, a bowing-out of the floor covering wood is avoided. On the other hand, in the case of drying out, the formation of gaps is reduced. Research has shown that the covering elements, in the case of absorbing excessive moisture, becomes somewhat compressed along their contact flanks. As a result of the pressing of wood, minor deformations occur within the wood in the edge area, which however are barely discernable from the outside. In the case of the inventive elastic adhesion, one obtains a substantially even surface loading or force distribution over the surface area. This means that the greater the adhered surface is, the greater is the force transmission or distribution. Besides this, a bonding is achieved in a way that protects the sub-floor. A substantially elastic joining also results in a substantial reduction in foot-step noise in comparison to the hard adhesives. The surprising benefit of the inventive floor covering adhesion is comprised therein, that despite low shear strength of the employed adhesive, the avoidance of tension peaks makes it possible to achieve a substantially higher force transmission than with the convention rigid DIN adhesives.

[0006] A preferred embodiment of the invention envisions that the adhesive is comprised of a reaction adhesive, preferably a polyurethane or polyurethane hybrid, which hardens upon exposure to water. Alternatively, the adhesive can be comprised of MS-polymers (modified silicones).

[0007] The invention is further concerned with the use of elastic adhesives with a higher breaking elongation, which hardens with a shear strength of less than 1.2 N/mm^2 , preferably from 0.6 to 1.0 N/mm^2 , for adhering wood floors onto a sub-floor preferably comprised of cement or concrete. The inventive adhesive is preferably applied to the sub-floor using a toothed trowel to a thickness of 0.5 to 5 N/mm^2 .

BRIEF DESCRIPTION OF THE DRAWING

[0008] In the following the invention will be explained in greater detail on the basis of the illustrated embodiment represented schematically in the figures. There is shown:

Fig. 1 a section through a wood floor;

Fig. 2 a shearing stress - elongation diagram for DIN-parquet adhesives and an inventive adhesive.

DETAILED DESCRIPTION OF THE INVENTION

[0009] The parquet floor shown in sectional representation in Fig. 1 is comprised of an adhesive 12 applied in a continuous layer onto a sub-floor 10 comprised of cement, and covering elements 16 which are covered over their entire surface to be adhered 14 with the adhesive 12. The adhesive is preferably comprised of a one component polyurethane which hardens upon exposure to water, which in the hardened condition exhibits a

shearing strength τ of less than 1.2 N/mm². The shear strength τ is a quotient of the highest force F_{\max} and the adhesive surface A of the floor-covering adhesive bond:

$$\tau = F_{\max}/A$$

In the stress-elongation diagram according to Fig. 2, the stress-elongation curve $\sigma = f(\epsilon)$ of various adhesives 1 and 2 is shown. The end of the respective curve defines the pull shear strength of the employed adhesive, which in the case of DIN-adhesive 1 is approximately 3.5 N/mm² and in the case of the inventive adhesive 2 is approximately 0.7 N/mm². As reference value there is shown with dashed line 3 in the diagram the average shear strength value of cement flooring. The inventive adhesive 2 belongs to the elastic adhesives while the floor covering adhesive 1 according to DIN 281 is non-elastic.

[00010] Experiments have shown that the elastic floor covering adhesive prevents bowing-out of the wood despite the lower shear strength of the adhesive, and this due to the even distribution of tension. The adhesion is shear resistant. Besides this, a material joining of the floor covering to the cement is produced: the shear strength of the proposed elastic adhesives 2 of 0.7 N/mm² is significantly lower than the surface rigidity of cement (1.2 N/mm²). The hardness of the hardened adhesive 2 is approximately 20 to 30 Shore (A). Thus, no damage to the cement floor can occur. For this reason, a pre-coating for sealing or strengthening the cement surface is not necessary. In contrast, the rigid DIN-adhesives with their shear strength of 3.5 N/mm² are significantly above that of cement. When adhering therewith, tension peaks occur at the edges of the floor covering elements. The forces resulting from the movement of wood are not distributed over the surface. Even an enlarging of the

adhesive surface 'does' not result in any improvement. In the case of the elastic adhesion, in comparison, the forces are transmitted or distributed over the entire adhesion surface: no tension peaks are produced. Thereby substantially higher forces can be transmitted with, at the same time, a lower tension exposure of the sub-floor. With the elastic adhesive no displacement occurs between the parquet elements. Besides this, a bowing out of the parquet elements is avoided.

Example

[00011] The general characteristics of the employed parquet adhesives are as follows:

Shore (A)	25-35	
Break Elongation	300 - 1000%	DIN 53 504
Shear Strength	< 1,2 N/mm ²	with reference to DIN 281
Recovery Value	> 70%	

[00012] In summary, the following can be concluded: The invention relates to a wooden floor, comprising of a hardenable adhesive 12 which is painted onto a floor base 10 in a continuous layer, and covering elements 16 of wood or a wood material of which the entire surface (14) to be bonded is adhered to the adhesive layer. According to the invention, the adhesive layer 12 has a thickness of 0.5 to 5 mm and the adhesive 12 has a shear strength, in its hardened state, which is less than that of the sub-floor 10 and is at most 1.2 N/mm², in order to obtain a floor covering with excellent dimensional stability.

What is Claimed is:

1. Floor, comprised of a sub-floor (10) continuously covered with a layer (12) of hardened adhesive and covering elements (16) of wood or wood materials completely covered on their surface to be adhered with the adhesive, thereby characterized, that the adhesive layer (12) has a layer thickness of 0.5 to 5 mm and that the adhesive has a shear strength in the hardened condition which is less than that of the sub-floor (10).
2. Sub-floor according to Claim 1, thereby characterized, that the shear strength of the adhesive is less than 1.2 N/mm^2 , preferably 0.6 to 1.0 N/mm^2 .
3. Floor according to Claim 1 or 2, thereby characterized, that the adhesive is comprised of a reaction resin which hardens upon exposure to water, preferably a polyurethane or polyurethane hybrid resin.
4. Floor according to one of Claims 1 through 3, thereby characterized, that the adhesive is comprised of MS-polymers.
5. Floor according to one of Claims 1 through 4, thereby characterized, that the adhesive in the hardened condition has a hardness of 20 to 35 Shore (A).
6. Floor according to one of Claims 1 through 5, thereby characterized, that the adhesive in the hardened condition has a break elongation of 300 to 1000%.

7. Use of adhesives for adhesion of floor covering elements (16) of wood or wood materials to a sub-floor (10), which adhesives have a shear strength of less than 1.2 N/mm^2 , preferably 0.6 to 1.0 N/mm^2 .
8. Use of adhesives, which harden with a Shore Hardness (A) of 20 to 35, for adhesion of floor covering elements (16) of wood or wood materials to a sub-floor (10).
9. Use of adhesives, which harden with a break elongation of 30 to 1000%, for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10).
10. Use according to one of Claims 7 through 9, for laying floor covering elements (16) to a sub-floor (10) of cement, concrete or pre-fabricated plates.
11. Use according to one of Claims 7 through 10, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.
12. Use according to one of Claims 7 through 11, wherein the adhesive is comprised of a polyurethane or polyurethane hybrid which hardens upon exposure to water.
13. Use according to one of Claims 7 through 11, wherein the adhesive is comprised of one component MS-polymers.

Substitute Claims

1. Floor, comprised of a sub-floor (10) continuously covered with a layer (12) of hardened adhesive and covering elements (16) of wood or wood materials completely covered on their surface to be adhered with the adhesive, wherein the adhesive layer (12) has a layer thickness of 0.5 to 5 mm, thereby characterized, that and that the adhesive has a shear strength in the hardened condition which is less than that of the sub-floor (10), and that the shear strength of the adhesive is less than 1.2 N/mm^2 .
2. Sub-floor according to Claim 1, thereby characterized, that the shear strength of the adhesive is 0.6 to 1.0 N/mm^2 .
3. Floor according to Claim 1 or 2, thereby characterized, that the adhesive is comprised of a reaction resin which hardens upon exposure to water, preferably a polyurethane or polyurethane hybrid resin.
4. Floor according to one of Claims 1 through 3, thereby characterized, that the adhesive is comprised of MS-polymers.
5. Floor according to one of Claims 1 through 4, thereby characterized, that the adhesive in the hardened condition has a hardness of 20 to 35 Shore (A).
6. Floor according to one of Claims 1 through 5, thereby characterized, that the adhesive in the hardened condition has a break elongation of 300 to 1000%.

7. Use of adhesives for adhesion of floor covering elements (16) of wood or wood materials to a sub-floor (10), which adhesives have a shear strength of less than 1.2 N/mm^2 , preferably 0.6 to 1.0 N/mm^2 .
8. Use of adhesives, which harden with a Shore Hardness (A) of 20 to 35, for adhesion of floor covering elements (16) of wood or wood materials to a sub-floor (10).
9. Use of adhesives, which harden with a break elongation of 30 to 1000%, for adhering floor covering elements (16) of wood or wood materials to a sub-floor (10).
10. Use according to one of Claims 7 through 9, for laying floor covering elements (16) to a sub-floor (10) of cement, concrete or pre-fabricated plates.
11. Use according to one of Claims 7 through 10, wherein the adhesive (12) is applied with a layer thickness of 0.5 to 5 mm.
12. Use according to one of Claims 7 through 11, wherein the adhesive is comprised of a polyurethane or polyurethane hybrid which hardens upon exposure to water.
13. Use according to one of Claims 7 through 11, wherein the adhesive is comprised of one component MS-polymers.

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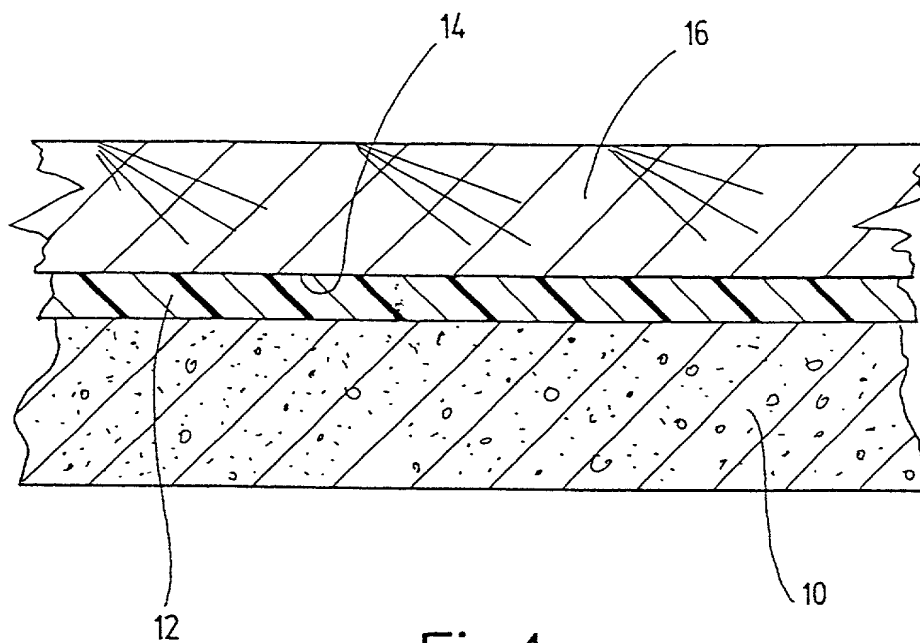


Fig. 1

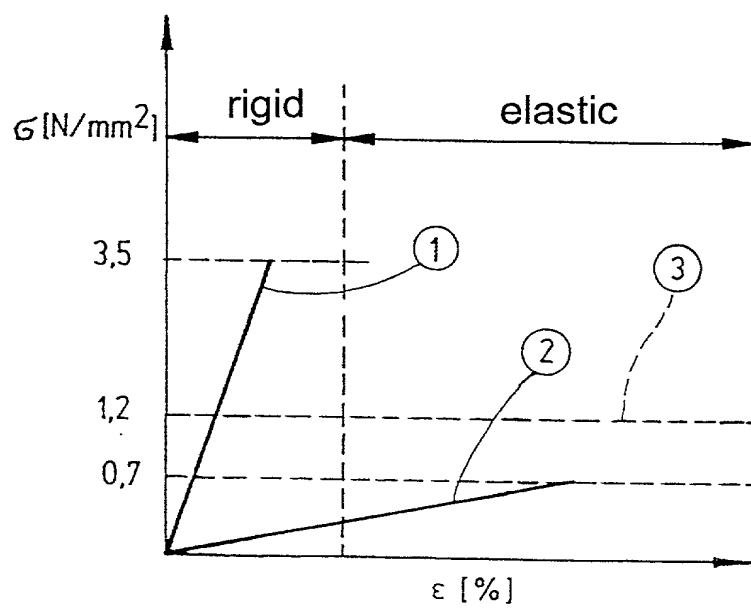


Fig. 2

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name: that I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural names are listed below) of the subject matter claimed and for which a patent is sought in the application entitled:

WOODEN FLOOR

which application is:

☒ the attached application
(for original application)

Based on Application No. _____
filed _____, and amended on _____
(for declaration not accompanying application)

that I have reviewed and understand the contents of the specification of the above-identified application, including the claims, as amended by any amendment referred to above; that I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56, that I hereby claim foreign priority benefits under Title 35, United States Code § 119, § 172 or § 365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified on said list any foreign application for patent or inventor's certificate on this invention having a filing date before that of the application on which priority is claimed:

Application No.	Country	Filing Date	Priority Claimed (yes or no)
199 28 030.4	Germany	June 18, 1999	Yes

I hereby claim the benefit of Title 35, United States Code §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge my duty to disclose any material information under 37 C.F.R. § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application No.	Filing Date	Status (patented, pending, abandoned)
		(2)

I hereby appoint Stephan A. Pendorf, Reg. No. 32,665 and Yaté K. Cutliff, Reg. No. 40,577, my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and request that all correspondence about the application be addressed to Stephan A. Pendorf at Pendorf & Cutliff, P.O. Box 20445, Tampa, FL 33622-0445.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date 11.9.2002First Inventor Elke KRAFT
First Name Middle Initial Last NameResidence Am Kaelberburren 9Signature Elke Kraft

D-72574 Bad Urach, Germany

Post Office Address Am Kaelberburren 9, D-72573 Bad UrachCitizenship GermanGermany DEX

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DATE 12/12/01SIGNATURE Donna L. Hovh

P.O. Box 2307
Arlington, VA
22202

SOLE/JOINT
ATTY DOCK:

Date 19.08.2000

Residence Alte Strasse 5,

D-72574 Bad Urach, Germany

Citizenship German

Second Inventor Thorsten KRAUS
First Name Middle Initial Last Name

Signature 

Post Office Address Alte Strasse 5, D-72574 Bad Urach,
Germany DEX

Date 16.01.00

Residence Immanuel-Kant-Strasse 122,

D-72574 Bad Urach, Germany

Citizenship German

Third Inventor Juergen KOESSLER
First Name Middle Initial Last Name

Signature 

Post Office Address Immanuel-Kant-Strasse 122,
D-72574 Bad Urach, Germany DEX

Date 16/8/00

Residence Alteburgstrasse 129,

D-72762 Reutlingen, Germany

Citizenship German

Fourth Inventor Ralf HEINZMANN
First Name Middle Initial Last Name

Signature 

Post Office Address Alteburgstrasse 129, D-72762 Reutlingen,
Germany DEX

Date 10/10/00

Residence Ochsensteige 77, D-89075 Ulm

Germany

Citizenship German

Fifth Inventor Roland SCHNEIDER
First Name Middle Initial Last Name

Signature 

Post Office Address Ochsensteige 77, D-89075 Ulm, Germany

Date 14.8.2000

Residence Wacholderweg 19,

D-72622 Nuertingen, Germany

Citizenship German

Sixth Inventor Hans-Christoph THIELEMANN
First Name Middle Initial Last Name

Signature 

Post Office Address Wacholderweg 19, D-72622 Nuertingen,
Germany

Date 10.10.100
Residence Minister-Schmid-Strasse 58
D-89597 Munderkingen, Germany
Citizenship German

7-00
Seventh Inventor Morten MUSCHAK
First Name Middle Initial Last Name
Signature [Signature]
Post Office Address Minister-Schmid-Strasse 58,
D-89597 Munderkingen, Germany CHX

Date 05.10.71 00
Residence Letziggraben 25, CH-8003 Zuerich
Switzerland
Citizenship Swiss

8-00
Eight Inventor Norbert SINGER
First Name Middle Initial Last Name
Signature [Signature]
Post Office Address Letziggraben 25, CH-8003 Zuerich CHX
Switzerland

Date 05.10.7 100
Residence Frohmat 6,
CH-6103 Schwarzenberg, Switzerland
Citizenship Swiss

9-00
Ninth Inventor Michael GEISSBUEHLER
First Name Middle Initial Last Name
Signature [Signature] CHX
Post Office Address Frohmat 6, CH-6103 Schwarzenberg,
Switzerland

Date 05.10.7 2000
Residence Bauherrenstrasse 24,
CH-8049 Zuerich, Switzerland
Citizenship Swiss-German

10-00
Tenth Inventor Josef WOLF
First Name Middle Initial Last Name
Signature [Signature]
Post Office Address Bauherrenstrasse 24, CH-8049 Zuerich,
Switzerland CHX

Date 05.10.71 00
Residence Hauptstrasse 8,
CH-5235 Ruefenach, Switzerland
Citizenship Swiss

11-00
Eleventh Inventor Beat MAERKI
First Name Middle Initial Last Name
Signature [Signature] CHX
Post Office Address Hauptstrasse 8, CH-5235 Ruefenach,
Switzerland

Date 05/07/00

Residence Brunnenwiesenstrasse 3 A

CH-8108 Daellikon, Switzerland

Citizenship Swiss German

Twelfth Inventor Dieter GENG
First Name Middle Initial Last Name

Signature [Signature]

Post Office Address Brunnenwiesenstrasse 3 A,

CH-8108 Daellikon, Switzerland CHX

Date 5.7.00

Residence Alte Landstrasse 30, CH-8804 Au,

Switzerland

Citizenship Swiss

Thirteenth Inventor Ueli PFENNINGER
First Name Middle Initial Last Name

Signature [Signature]

Post Office Address Alte Landstrasse 30, CH-8804 Au,

Switzerland CHX

Date 1/12/00

Residence 33 Rue des Belles Feuilles,

F-75016 Paris, France

Citizenship French

Fourteenth Inventor Philippe DE VRIENDT
First Name Middle Initial Last Name

Signature [Signature]

Post Office Address 33 Rue des Belles Feuilles,

F-75016 Paris, France FRX

Date 13/12/00

Residence Viale San Gimignano 9,

I-20146 Milano, Italy

Citizenship Italian

Fifteenth Inventor Fabio GUERRINI
First Name Middle Initial Last Name

Signature [Signature]

Post Office Address Viale San Gimignano 9, I-20146 Milano,

Italy ITX